

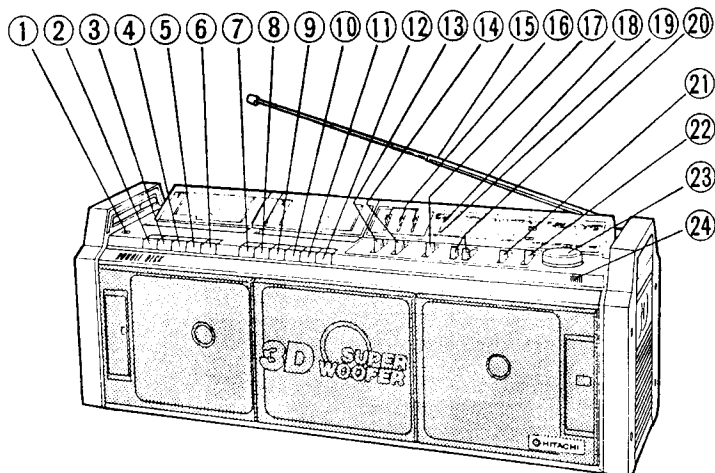
# **HITACHI** **SERVICE MANUAL**

TY

No. 509E

**TRK-3D8**  
H, HC, E, E (BS), W, W(UN), AU

**TN-21HW-488 Chassis**



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## KEY TO ILLUSTRATIONS

① HEADPHONES SOCKET

### TAPE 1

- ② PLAYBACK BUTTON
- ③ REWIND BUTTON
- ④ FAST FORWARD BUTTON
- ⑤ STOP/EJECT BUTTON
- ⑥ PAUSE BUTTON

For Service Manuals Contact  
**MAURITRON TECHNICAL SERVICES**  
8 Cherry Tree Rd, Chinnor  
Oxon OX9 4QY  
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Email:- enquiries@mauritron.co.uk

### TAPE 2

- ⑦ RECORD BUTTON
- ⑧ PLAYBACK BUTTON
- ⑨ REWIND BUTTON
- ⑩ FAST FORWARD BUTTON

⑪ STOP/EJECT BUTTON

⑫ PAUSE BUTTON

⑬ INNER MIC/SPEAKER SELECTOR

⑭ TAPE SELECTOR

⑮ ROD ANTENNA (AERIAL)

⑯ GRAPHIC EQUALIZER CONTROLS

⑰ FM MODE/DUBBING SPEED/RIF SELECTOR

⑱ FM STEREO INDICATOR

⑲ OPERATION INDICATOR

⑳ VOLUME CONTROLS

㉑ FUNCTION SELECTOR

㉒ AM BAND SELECTOR (Except H, HC)

㉓ TUNING CONTROL

㉔ INNER MICROPHONE (MONAURAL)

## SAFETY PRECAUTION

The following precautions should be observed when servicing.

- Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts.  
Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with  $\Delta$  in the circuit diagram and printed wiring board.
- Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

**SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.**

**FM/SW/MW/LW RADIO CASSETTE TAPE RECORDER**

**June 1986**

**TOYOKAWA WORKS**

# SPECIFICATIONS

## General Section

<b>Power supply</b>	AC 120V, 60Hz [H, HC] AC 220V, 50Hz [E] AC 110–127V/200–220V/ 230–250V, 50/60Hz [W, W (UN)] 240V, 50Hz [E (BS), AU] DC 12V (IEC R20 × 8 or equivalent)
<b>Batteries</b>	25W
<b>Power Consumption</b>	60W P.M.P. (AC operation)
<b>Power Output</b>	14W (3W × 2 + 8W) (DC T.H.D. 10%)
<b>Speakers</b>	16 cm, 8 ohms × 1 12cm, 4 ohms × 2 2 cm, 300 ohms × 2
<b>Dimensions (W×H×D)</b>	590 × 220 × 198 mm
<b>Weight</b>	6.7 kg (with battery)
<b>Semiconductors</b>	ICs: 5 Transistors: 23 [E, E (BS)], 22 [W, W (UN), AU, H, HC] Diodes: 15 [E, E (BS)] 16 [W, W (UN), AU], 13 [H, HC] LEDs: 2 Varicap: 1

## Radio Section

<b>Circuit System</b>	FM/SW/MW/LW 4-band [E, E (BS)] FM/SW <sub>2</sub> /SW <sub>1</sub> /MW 4-band [W, AU] FM/AM 2-band [H, HC]										
<b>Tuning Range</b>	<table> <tr> <td>FM: 87.5 to 108 MHz</td> <td rowspan="3">[For E, E (BS)]</td> </tr> <tr> <td>SW: 6.0 to 18.0 MHz</td> </tr> <tr> <td>MW: 530 to 1,605 kHz</td> </tr> <tr> <td>LW: 150 to 285 kHz</td> <td rowspan="5">[For W, W (UN), AU]</td> </tr> <tr> <td>FM: 88 to 108 MHz</td> </tr> <tr> <td>SW<sub>2</sub>: 7.0 to 22.0 MHz</td> </tr> <tr> <td>SW<sub>1</sub>: 2.3 to 7.0 MHz</td> </tr> <tr> <td>MW: 530 to 1,605 kHz</td> </tr> </table>	FM: 87.5 to 108 MHz	[For E, E (BS)]	SW: 6.0 to 18.0 MHz	MW: 530 to 1,605 kHz	LW: 150 to 285 kHz	[For W, W (UN), AU]	FM: 88 to 108 MHz	SW <sub>2</sub> : 7.0 to 22.0 MHz	SW <sub>1</sub> : 2.3 to 7.0 MHz	MW: 530 to 1,605 kHz
FM: 87.5 to 108 MHz	[For E, E (BS)]										
SW: 6.0 to 18.0 MHz											
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LW: 150 to 285 kHz	[For W, W (UN), AU]										
FM: 88 to 108 MHz											
SW <sub>2</sub> : 7.0 to 22.0 MHz											
SW <sub>1</sub> : 2.3 to 7.0 MHz											
MW: 530 to 1,605 kHz											

FM: 88 to 108 MHz } [For H, HC]  
AM: 530 to 1,605 kHz }

## Sensitivity

FM: 12dB(pra.), 5dB(max) }  
SW: 30dB(pra.), 22dB(max) } [E, E (BS)]  
MW: 50dB(pra.), 38dB(max)  
LW: 55dB(pra.), 48dB(max)  
FM: 12dB(pra.), 5dB(max) }  
SW<sub>2</sub>: 30dB(pra.), 27dB(max) } [W, W (UN), AU]  
SW<sub>1</sub>: 47dB(pra.), 38dB(max)  
MW: 50dB(pra.), 38dB(max)  
FM: 12dB(pra.), 5dB(max) }  
MW: 50dB(pra.), 38dB(max) } [H, HC]

## Intermediate Frequency

FM: 10.7 MHz  
AM: 465 kHz [E, E (BS)]  
AM: 455 kHz [W, W (UN), AU, H, HC]

## Antennas (Aerials)

FM/SW/SW<sub>2</sub>: Rod antenna  
SW<sub>1</sub>/MW/LW: Built-in ferrite-core antenna

## Tape Recorder Section

<b>Tape</b>	Compact Cassette (C30, C60, C90)
<b>Tracks</b>	4-track (2-channel stereo)
<b>Recording System</b>	AC bias 57 kHz
<b>Erasing System</b>	Magnet Erase
<b>Playback Frequency Response</b>	Metal tape: 60–12,000 Hz (HITACHI ME90) High bias tape (Chromium tape): 60–11,000 Hz (HITACHI SX90, HITACHI EX90) Normal tape: 60–10,000 Hz (HITACHI DL90)
<b>Wow and Flutter</b>	0.3% (WRMS)
<b>Crosstalk</b>	
<b>Between Tracks</b>	60dB
<b>Between Channels</b>	30dB
<b>Erasing Ratio</b>	60dB
<b>Distortion</b>	3%
<b>Head</b>	Permalloy
<b>Motor</b>	DC micro motor × 2
<b>Input Sensitivity</b>	CD/LINE 500mV/47kohms
<b>Headphone output Impedance</b>	8ohms to 300ohms

## DISASSEMBLY

### 1. Removing the cassette lid

- (1) Press the EJECT button to open the cassette lid and disengage the one side of the cassette lid by pressing the part indicated with arrow ① as shown in Fig. 1.

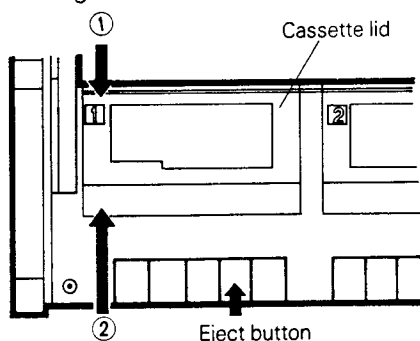


Fig. 1

- (2) Passing the boss of the cassette lid arm through the notch in the direction indicated with arrow ① as shown in Fig. 2.

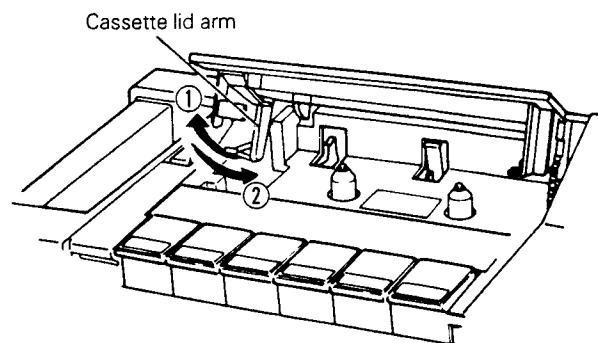


Fig. 2

## 2. Installing the cassette lid (For only cassette lid ass'y)

- (1) Securely hook the boss of the cassette lid at the spring as shown in Fig. 3.

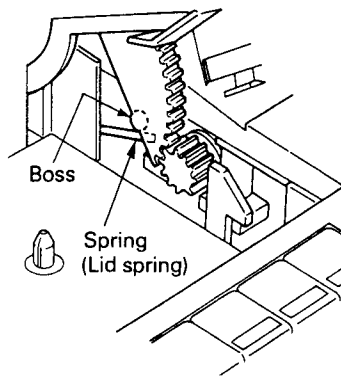


Fig. 3

- (2) Passing the cassette lid arm in the notch in the direction indicated with arrow ② as shown in Fig. 2.
- (3) Keeping the cassette lid opened, engage the part of the cassette lid indicated with arrow ② as shown in Fig. 1.

## 3. Top panel and front case (Fig. 4, 5, 6)

- (1) Remove the five mounting screws ① on each left and right side handle to remove the side handles.
- (2) Remove the eight mounting screws ②.
- (3) Remove the front case by pulling out toward the front.  
In this condition, the three connectors ③ are still connected to the main PWB. These connectors should be removed after removing the top panel.
- (4) Remove mounting screw ④ and the two mounting screws ⑤.
- (5) Remove the top panel by lifting up. At this time, remove the connector ① connected to the MA PWB.
- (6) Remove the three connectors ③ connected between the front case and the MA PWB, then remove the front case completely.

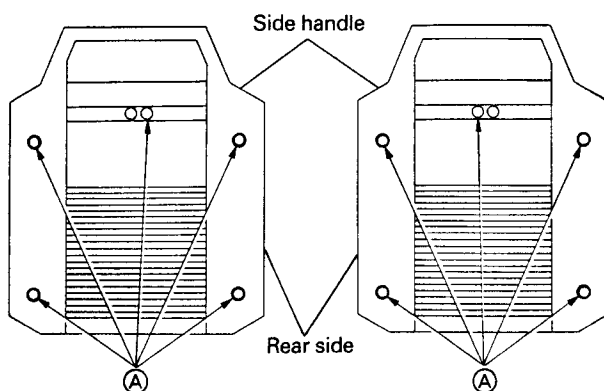


Fig. 4

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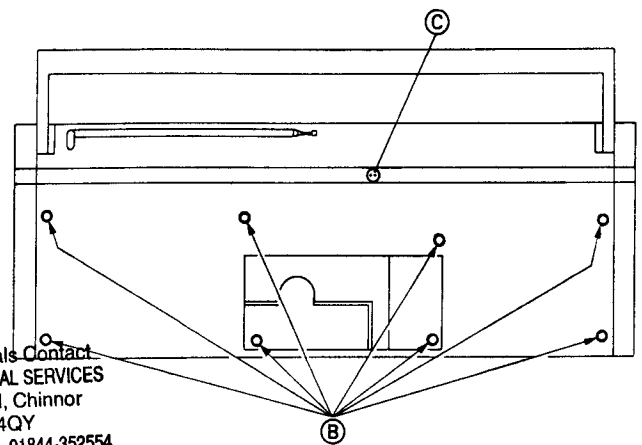


Fig. 5

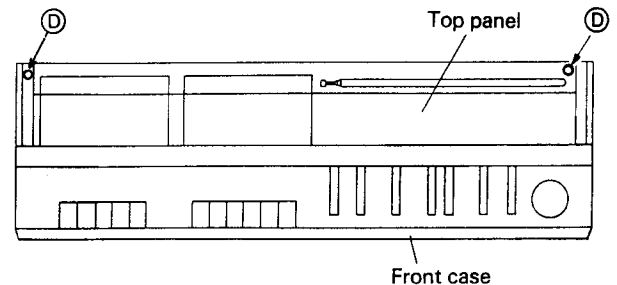


Fig. 6

## 4. Cassette chassis (Fig. 7)

- (1) After removing the top panel, remove the six mounting screws ⑥.
- (2) Remove the five connectors ③ to remove the cassette chassis.

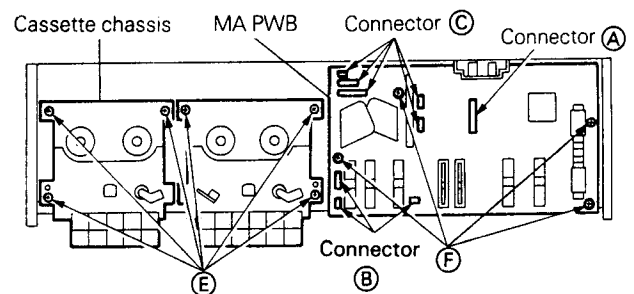


Fig. 7

## 5. MA P.W.B. (Fig. 7)

- (1) After removing the top panel, remove the four mounting screws ⑦.
- (2) Remove the five connectors ③, and then lift the MA PWB upward.

## 6. P.P.W.B. (Fig. 8)

- (1) After removing the front case, remove the two mounting screws ⑧.
- (2) Remove connector ④, and connector ③-1 connected to the MA PWB

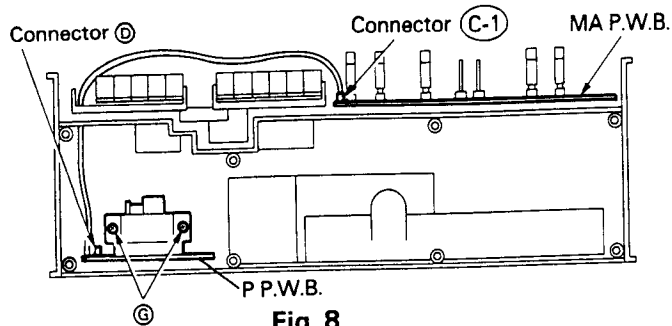


Fig. 8

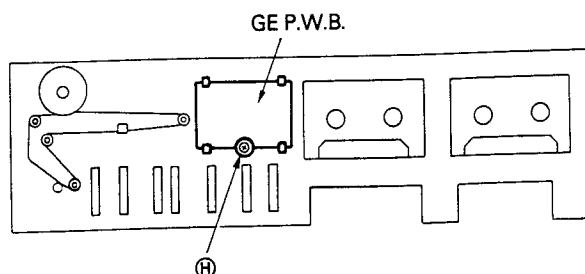


Fig. 9

## 7. GE P.W.B. (Fig. 9)

After removing the top panel, remove the mounting screw (H).

# ADJUSTMENTS

## 1. Radio Section FM Section

\* ( ) For W. Germany & Italy

FM Section

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	FM IF	Turn T202 fully counterclockwise.			10.7 MHz	Highest	T101	Note 1
	(2)	S-Curve	● Genescope (10.7 MHz)	Q102	Ⓒ			T202	Note 2
2	(1)	FM OSC (Covering)	● FM signal generator (400 Hz, 30% dev.) ● Oscilloscope ● VTVM	Ⓐ Ⓑ Earth (thru FM dummy antenna) (Note 3)	Ⓒ	87 MHz *(87.5 MHz)	Lowest	L102	Max.
	(2)					109 MHz *(108 MHz)	Highest	CT102	
	(3)					Repeat steps (1) and (2)			Max
3	(1)	FM ANT. (Tracking)				90 MHz	90 MHz	L101	
	(2)					106 MHz	106 MHz	CT101	
	(3)					Repeat steps (1) and (2)			
4	(1)	FM MPX. (Multiplex) free run	● Frequency counter	Connect a 10μF 25V electrolytic capacitor between the No. 1 pin of IC301 and the ground	Ⓒ	—	—	RT301	38 kHz ± 50 Hz (Note 4)

## AM Section

Step	Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
1	(1) AM IF	● Genescope (455 kHz)	Ferrite-core antenna (Note 5)	Ⓒ	455 kHz	Highest	T201 T203	Note 6
	(2)				Repeat step (1)			
2	(1) MW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	515 kHz	Lowest	L155	Max.
	(2)				1650 kHz	Highest	CT158	
	(3)				Repeat steps (1) and (2)			Max.
3	(1) MW ANT. (Tracking)				600 kHz	600 kHz	L152	
	(2)				1400 kHz	1400 kHz	CT157	
	(3)				Repeat steps (1) and (2)			

Step	Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
For E/E (BS)	4	(1) AM IF	● Genescope (465 kHz)	Ferrite-core antenna (Note 5)	Ⓒ	465 kHz	Highest	T201 T203
						Repeat step (1)		
	5	(1) LW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.)	Ferrite-core antenna (Note 5)	Ⓒ	145 kHz	Lowest	L156
						290 kHz	Highest	CT156
	6	(1) LW ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	Repeat steps (1) and (2)		
						160 kHz	160 kHz	L153
	7	(1) MW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.)	Ferrite-core antenna (Note 5)	Ⓒ	270 kHz	270 kHz	CT153
						Repeat steps (1) and (2)		
	8	(1) MW ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	515 kHz	Lowest	L155
						1650 kHz	Highest	CT155
For W/AU	11	(1) AM IF	● Genescope (455 kHz)	Ferrite-core antenna (Note 5)	Ⓒ	Repeat steps (1) and (2)		
						455 kHz	Highest	T201 T203
	12	(1) MW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.)	Ferrite-core antenna (Note 5)	Ⓒ	515 kHz	Lowest	L156
						1650 kHz	Highest	CT156
	13	(1) MW ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	Repeat steps (1) and (2)		
						600 kHz	600 kHz	L152
	14	(1) SW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.)	Ferrite-core antenna (Note 5)	Ⓒ	1400 kHz	1400 kHz	CT153
						Repeat steps (1) and (2)		
	15	(1) SW ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	2.2 kHz	Lowest	L155
						7.3 kHz	Highest	CT155
For W/AU	16	(1) SW2 OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.)	Ferrite-core antenna (Note 5)	Ⓒ	Repeat steps (1) and (2)		
						2.7 kHz	2.7 kHz	L153
	17	(1) SW2 ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	6.3 kHz	6.3 kHz	CT152
						Repeat steps (1) and (2)		
	18	(1) SW2 OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.)	Ferrite-core antenna (Note 5)	Ⓒ	6.7 MHz	Lowest	L154
						23 MHz	Highest	CT154
	19	(1) SW2 ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	Repeat steps (1) and (2)		
						8 MHz	8 MHz	L151
	20	(1) SW2 ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	Ⓒ	20 MHz	20 MHz	CT151
						Repeat steps (1) and (2)		

**Note:**

1. Feed in a weak signal to Q102 from the genescope. Adjust T101 for maximum gain and the waveform indicated in Fig. 10. If the center of the waveform cannot be lined up on the marker, adjust the right/left balance.

Adjust the genescope output so that there is a little noise riding on the leading edge.

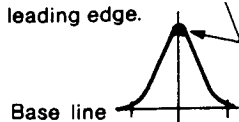


Fig. 10

2. Use the T202 core to form the S-curve shown in Fig. 11. Adjust the symmetry of A and B about point C for linearity.

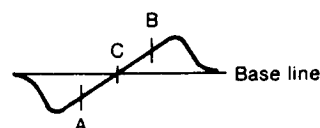


Fig. 11

3. FM dummy antenna is shown in Fig. 12.

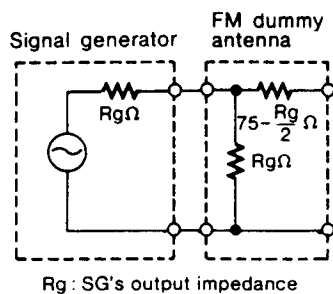
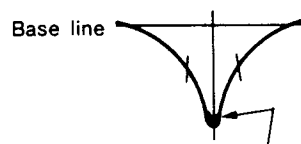


Fig. 12

4. Connect the frequency counter to T.P. ① and connect a 220 kohms resistor T.P. ② to GND.
5. Connect the output of AM signal generator to the loop antenna, and put it near to the ferrite-core antenna.

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6. Feed in a weak signal from the genescope. Adjust T201, T203 for maximum gain and the waveform of Fig. 13.



Adjust the genescope output so that there is a little noise riding on the leading edge.

Fig. 13

7. SW. dummy antenna is shown in Fig. 14.

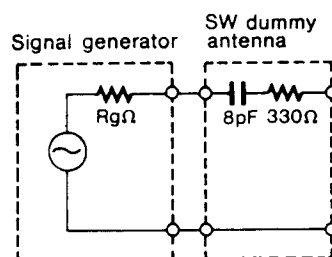


Fig. 14

## ADJUSTMENT PARTS LOCATION

### ● TUNER SECTION

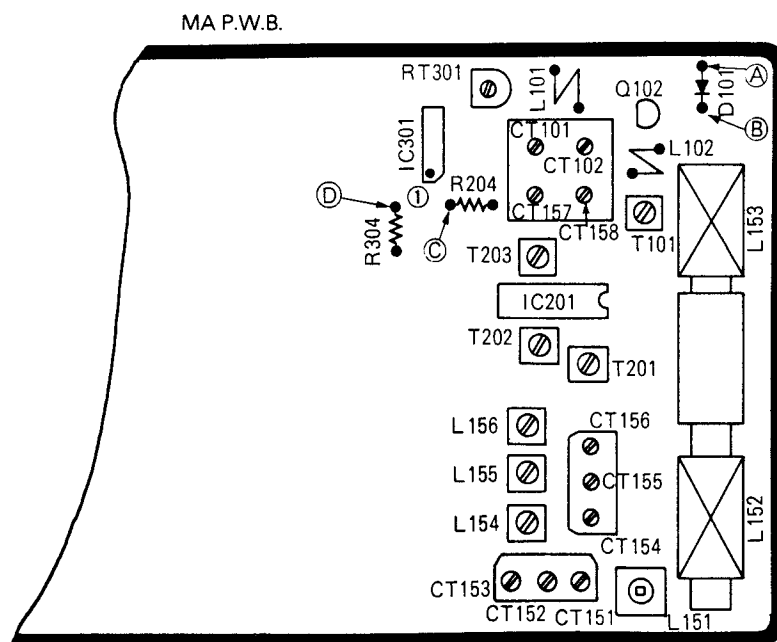


Fig. 15

## 2. Tape Recorder Section

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol.

Step	Adjustment Item		Measuring Instrument and Connection			Check Tape	Mode	Adjusted Position		Adjusted Value	Remarks
			Measuring Instrument	Input Terminal	Output Terminal			TAPE 1	TAPE 2		
1	Tape speed	Normal	● Frequency counter	—	Speaker terminal	Tape speed adjustment tape (3 kHz)	Playback	RT701	RT703	3 kHz $\pm$ 20 Hz	Note 1
		High						RT702	RT704	6 kHz $\pm$ 40 Hz	
2	Head azimuth		● VTVM	—	Speaker terminal	Head azimuth adjustment tape (10 kHz)	Playback	Azimuth adjusting screw		Output max.	Note 2

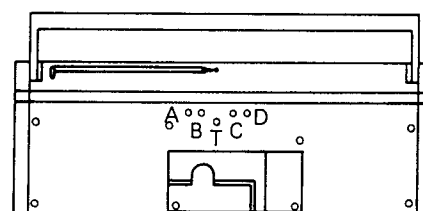
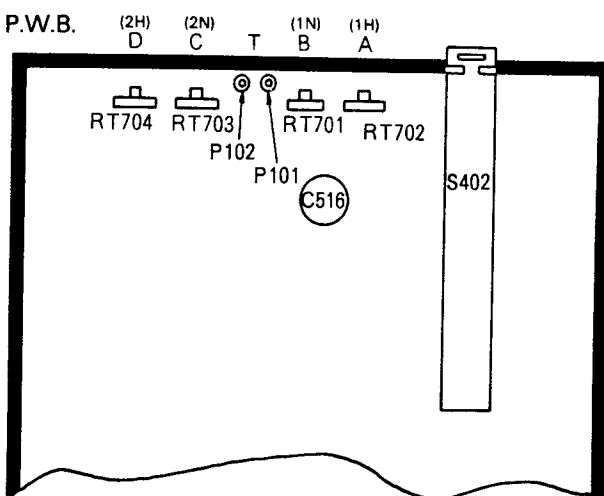
### Note:

1. Perform adjustments within 30 seconds after heat-running for more than 20 minutes. In high-speed adjustment, short-circuit between P101 and P102.

2. When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

### ● TAPE SECTION

MA P.W.B.



REAR VIEW

This adjustment should be performed through the rear case.

For adjusting the high-speed, insert the adjustment screwdriver through the T-shaped hole to short-circuit P101 and P102.

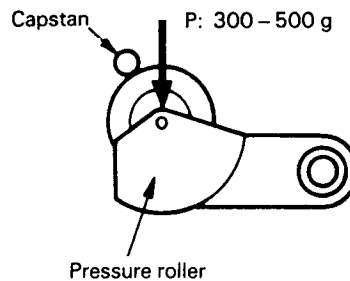
Fig. 16

## INSPECTION OF MECHANISM

Item	Checking item		Reference value	Remarks
1	Pressure of pressure roller		300 – 500g	Note
2	Take-up torque		30 – 60 g·cm	
3	Fast forward/Rewind torque		50g·cm or more	
4	Auto-Stop sensor operation force		40 – 75 g	
5	Brake torque		15 g·cm or more	Measured in stop mode
6	Back tension torque	Take-up	1 – 6 g·cm	
		Supply	1 – 4 g·cm	
7	Flywheel thrust gap		0.05 – 0.5 mm	
8	Button operation force	Play button	1.1 kg or less	
		FF button	0.8 kg or less	
		Rewind button	1.1 kg or less	
		Eject button	0.6 kg or less	
		Record button	1.0 kg or less	
		Pause button	1.0 kg or less	

**Note:**

Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

**Fig. 17**

## LUBRICATION

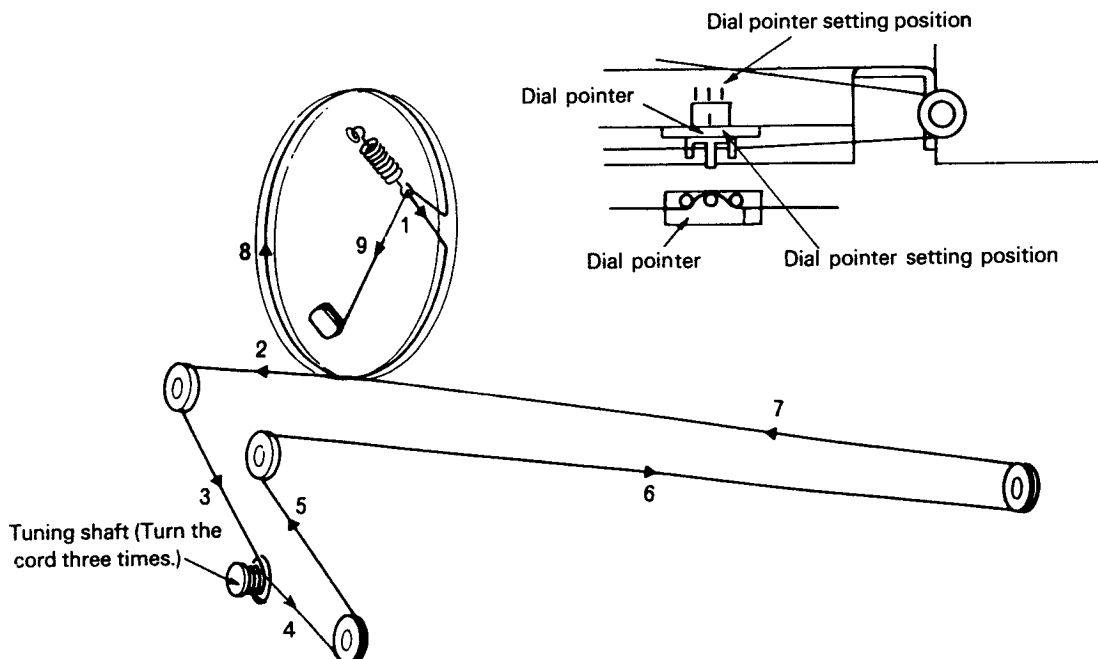
Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point.

Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use. Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication point		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (# 1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold	White grease (FL-LUBE-A)
	Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Floil (GB-TS-1)

## DIAL CORD STRINGING

1. Rotate the tuning knob fully clockwise.
2. Thread the dial cord around the pulleys shown in the diagram in numerical order.
3. Set the dial pointer so that it points the scale (normally, center line of 3 lines) on the top panel.

**Fig. 18**

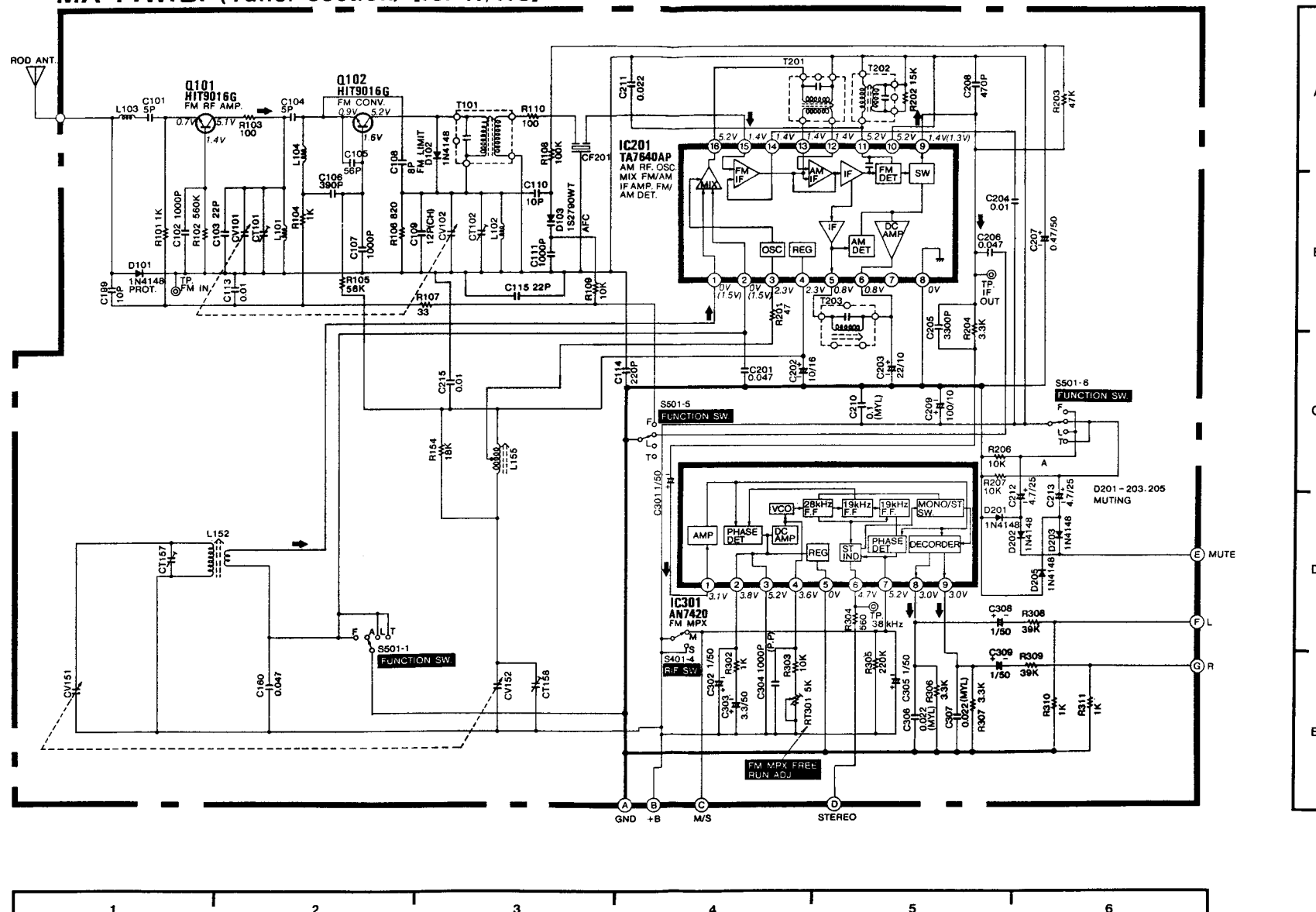


# CIRCUIT DIAGRAM

## CAUTION

Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mmφ.

## MA P.W.B. (Tuner section) [for H, HC] ( ) AM MODE



**MA P.W.B. (Tuner section) [for E, E(BS)] → ( ) AM MODE**

Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mm $\phi$ .

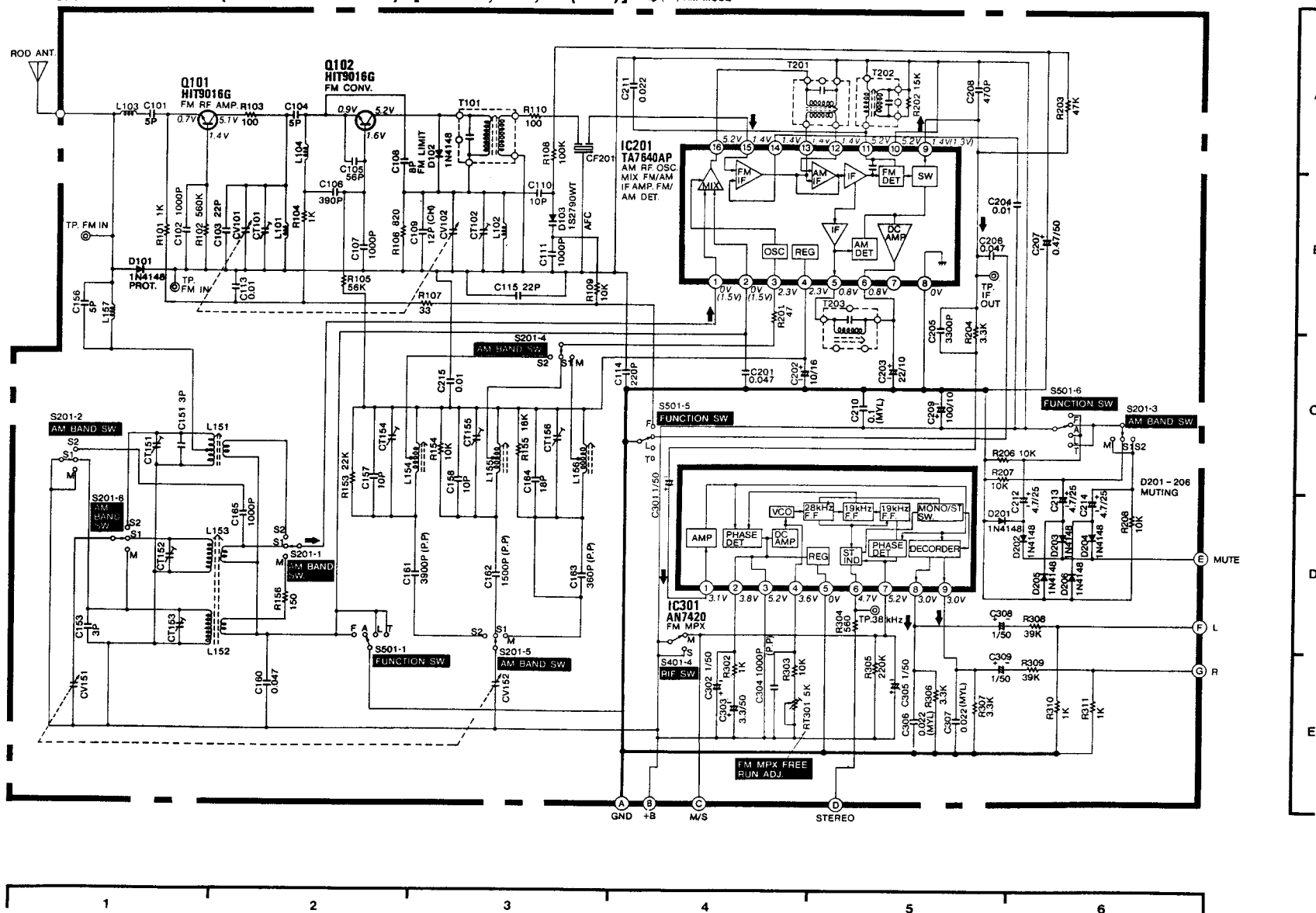


# CIRCUIT DIAGRAM

## CAUTION

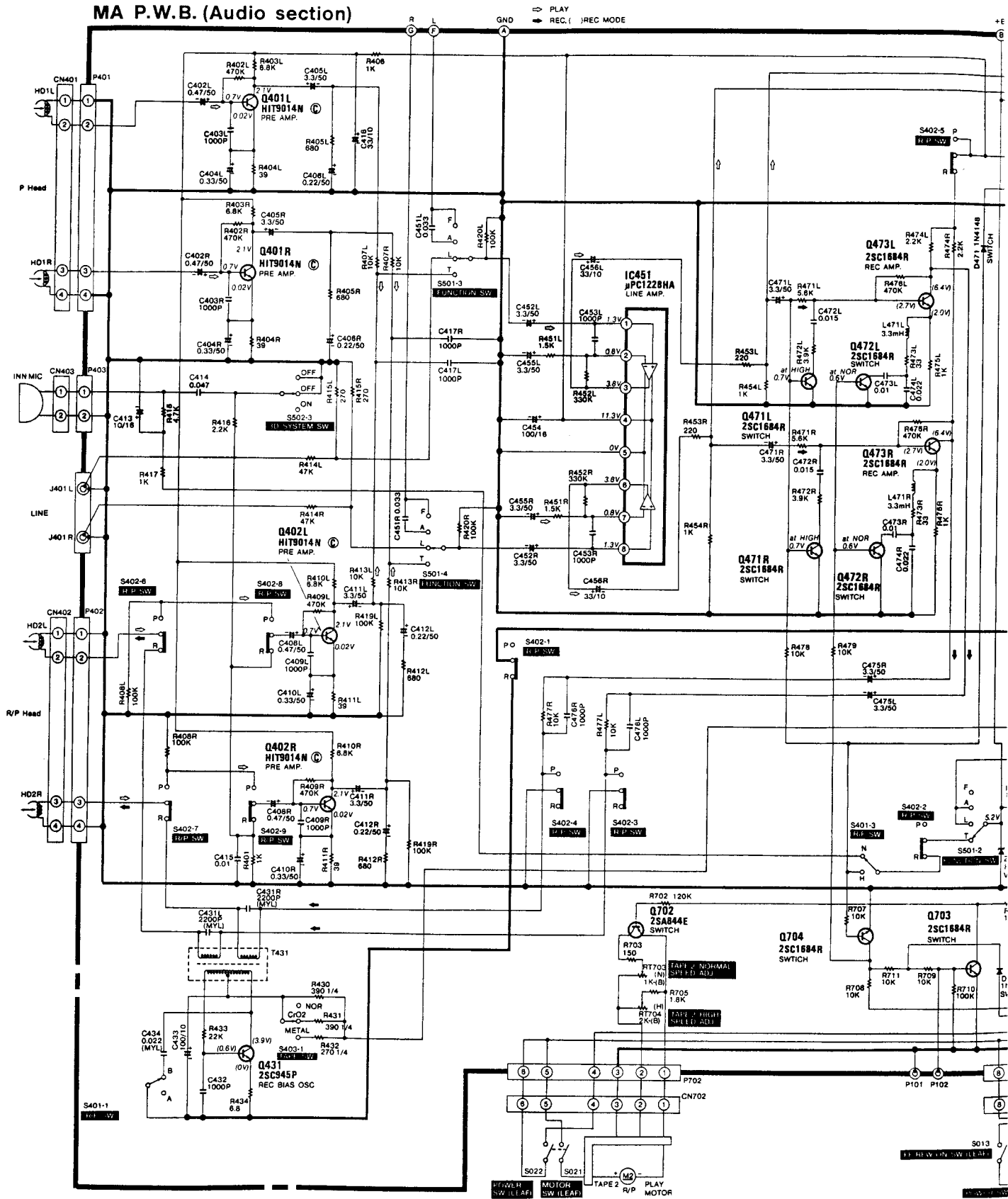
Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mmφ.

## MA P.W.B. (Tuner section) [for W, AU, W(UN)]



# CIRCUIT DIAGRAM

## MA P.W.B. (Audio section)



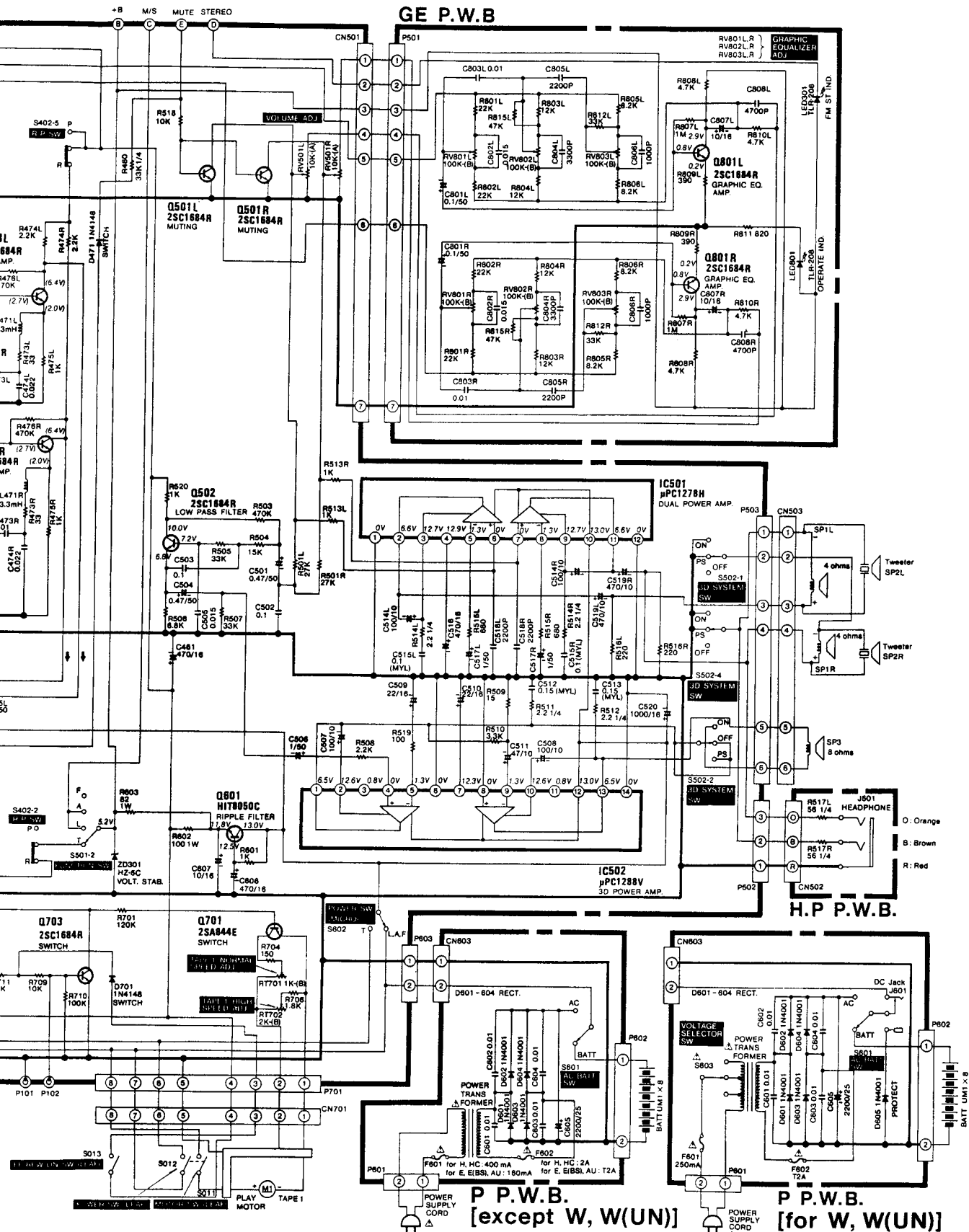
Use the electrolytic capacitors v  
the diameter of them is more th.

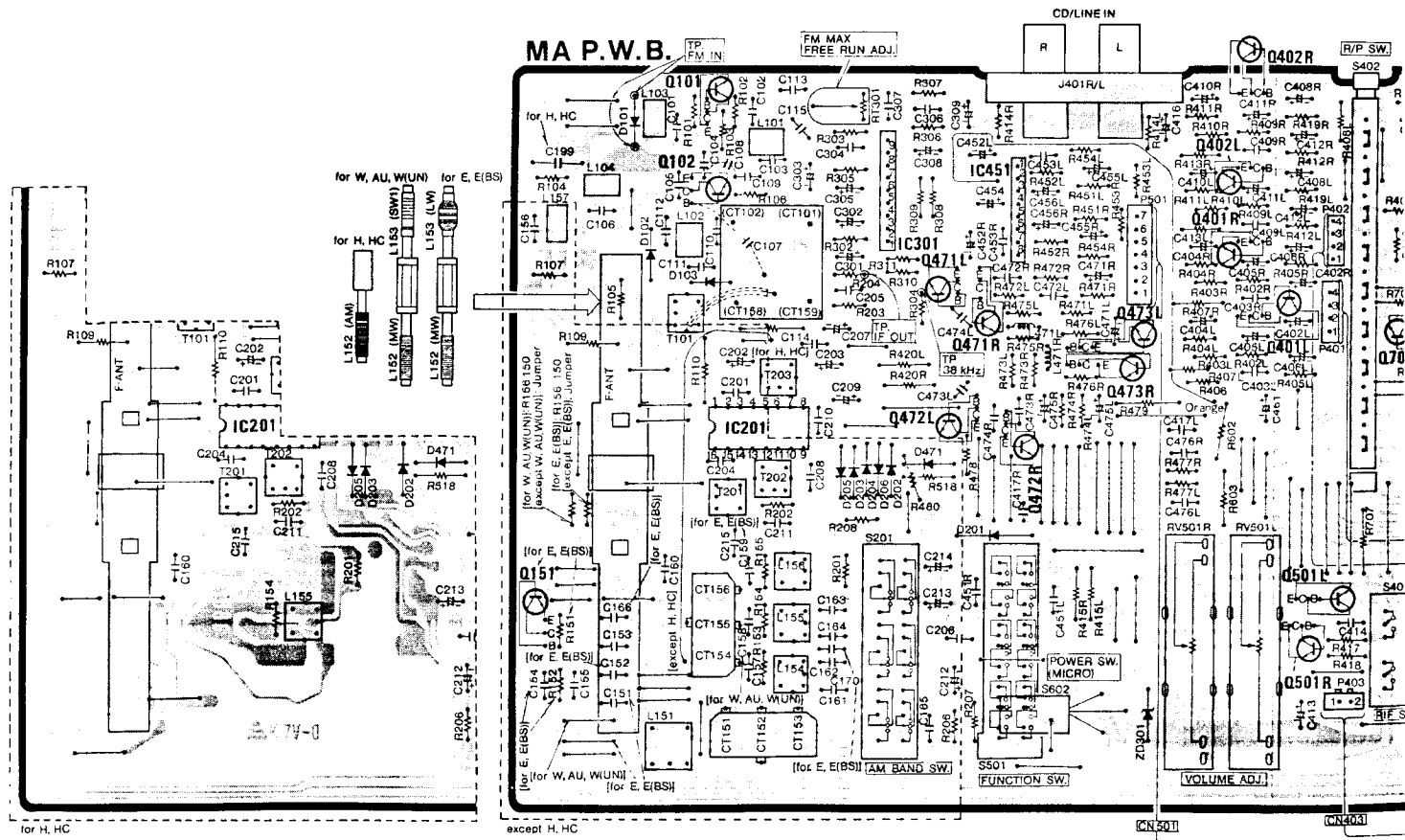
**ction)**



**CAUTION**

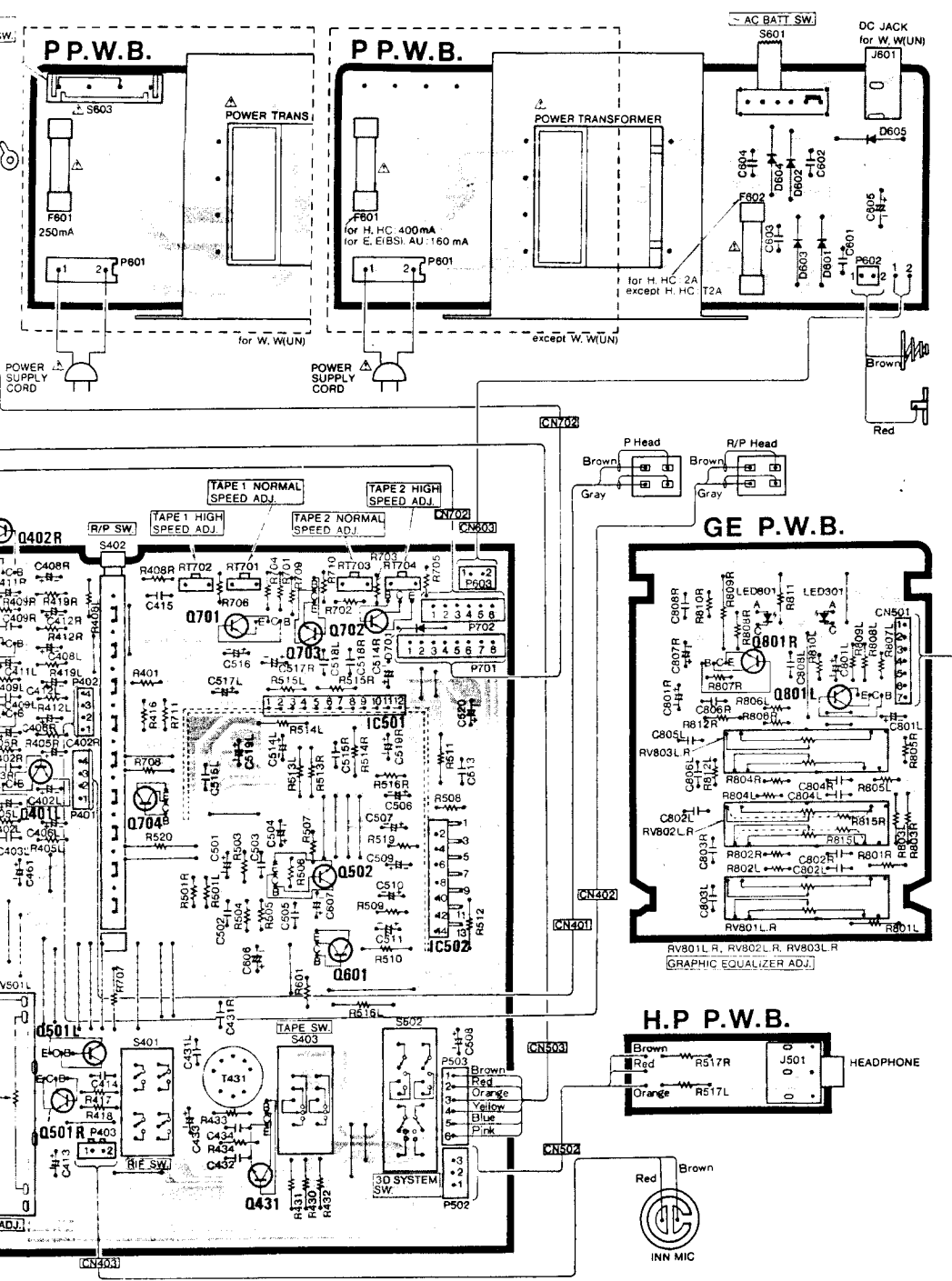
Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mmφ.











Q101	Q102	Q151
E 0.7V	E 0.9V	E 0.9V
C 5.1V	C 5.2V	C 5.3V
B 1.4V	B 1.6V	B 1.7V

Q401L	Q402L	Q431
E 0.02V	E 0.02V	E 0.0V
C 2.1V	C 2.1V	C 3.9V
B 0.7V	B 0.7V	B 0.6V

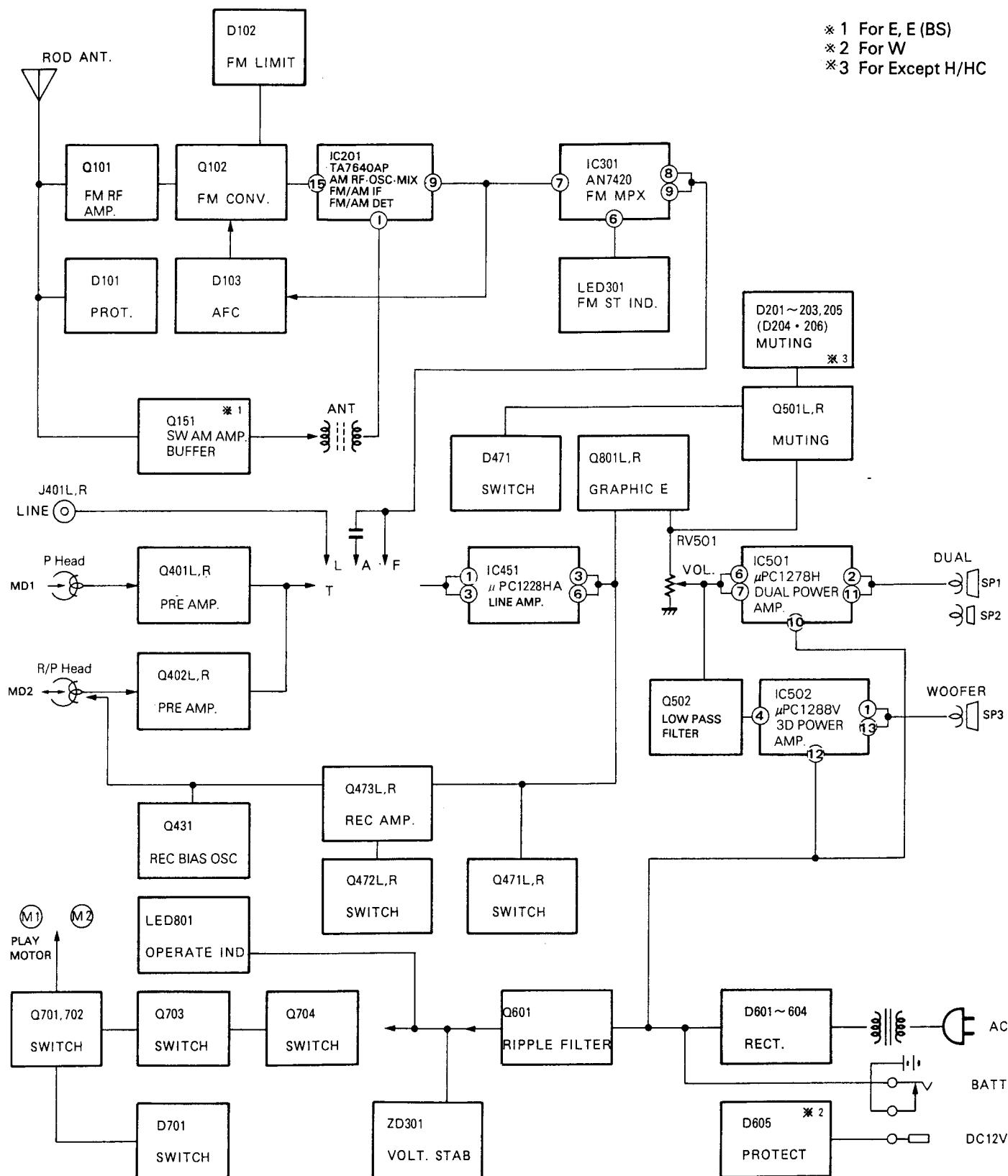
Q471L	Q471R
E -	E -
C -	C -
B at HIGH 0.7V	B at HIGH 0.7V

Q472L	Q472R
E -	E -
C -	C -
B at NOR 0.6V	B at NOR 0.6V

IC451	Q473L	Q502
11.0V	E 2.0V	E 6.8V
2.0V	C 6.4V	C 10.0V
3.2V	B 2.7V	B 7.2V
4.2V	E 11.8V	E 10.2V
5.0V	C 13.0V	C 12.9V
6.0V	B 12.3V	B 10.8V

IC501	IC502
11.0V	1.65V
2.66V	8.0V
3.72V	9.12V
4.72V	10.26V
5.73V	11.30V
6.0V	12.30V
	13.65V
	14.0V

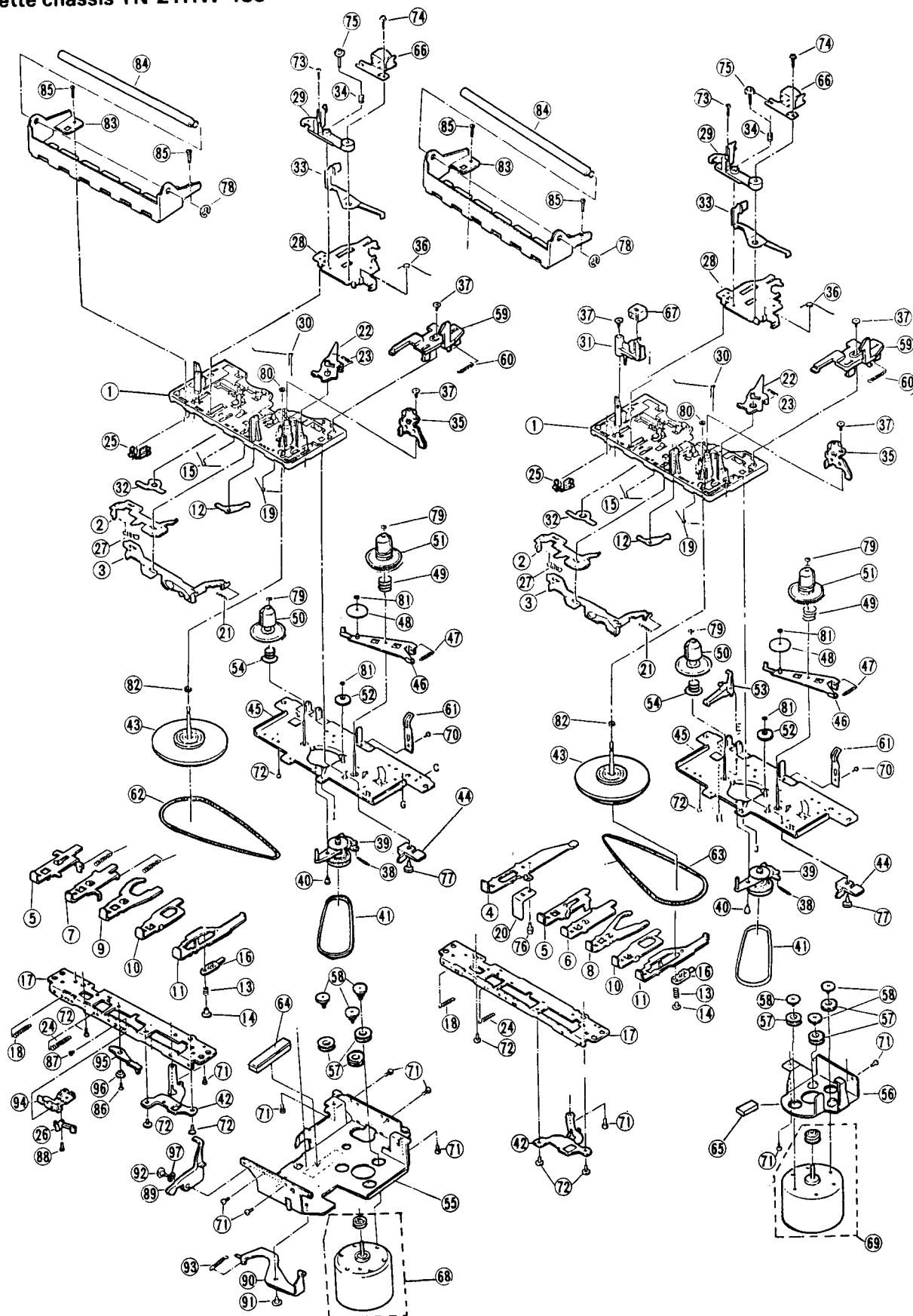
## BLOCK DIAGRAM



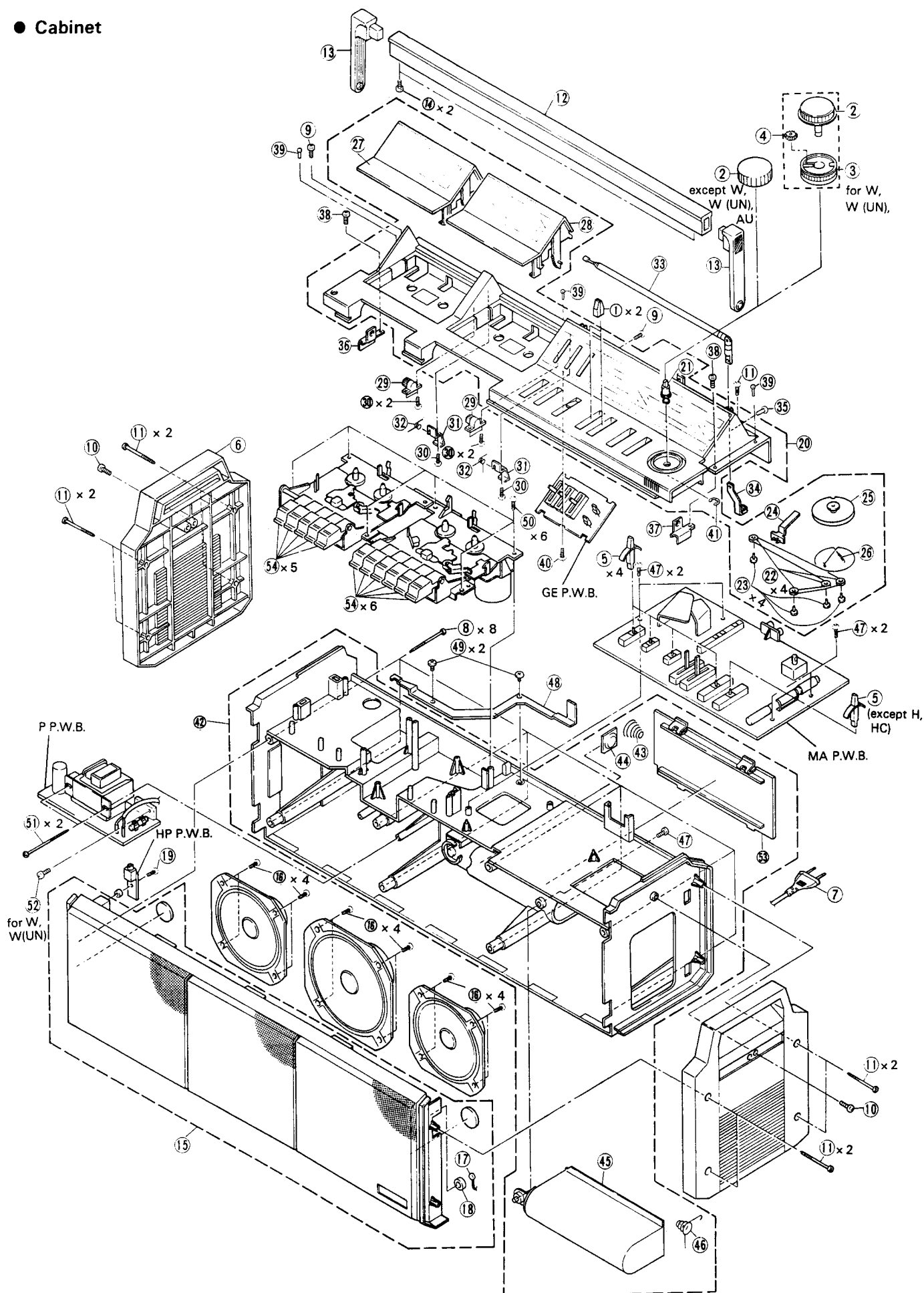
## EXPLODED VIEW

Nos. are reference Nos. of parts list

## ● Cassette chassis TN-21HW-488



## ● Cabinet



# REPLACEMENT PARTS LIST

## Cassette chassis (TN-21HW-488)

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
1	4818991	Main base ass'y	34	4819017	Spring	66	2555671	Record playback head
2	4818992	Switch plate	35	4820222	Pressur roller arm ass'y	67	2557341	Erase head
3	4832411	Push button actuator ass'y	36	4820223	Spring, pressure roller arm	68	4833461	DC Motor ass'y (A)
4	4823651	REC button lever	37	4819045	Screw	69	4833462	DC Motor ass'y (B)
5	4823661	PLAY button lever	38	4820225	Spring, RF pulley arm	70	4819063	Screw, Tapping 2 x 3
6	4823671	RWD button lever	39	4833453	Pulley arm ass'y (REWIND/FORWARD)	71	4819068	Screw, Tapping 2 x 4
7	4832451	Lever, rewind button	40	4831618	RF arm collar screw	72	4819607	Screw, Bind tapping 2 x 5
8	4823681	FF button lever	41	4820227	Belt	73	4819611	Screw M2x6
9	4832452	Lever, forward	42	4831610	Metal guide	74	4819060	Screw, 2 x 7
10	4823691	STOP button lever	43	4833454	Flywheel ass'y	75	4819600	Azimuth screw
11	4823701	PAUSE button lever	44	4833455	Bracket, PAUSE	76	4819186	2 x 3 screw with washer
12	4818990	Lever, RWD	45	4820232	Reel base ass'y	77	4819191	Tapping screw 2x6
13	4819132	Spring, PAUSE lever	46	4820233	Take-up gear plate ass'y	78	4833471	E type ring 3.2
14	4819133	Stopper, PAUSE	47	4819020	Spring, TG plate	79	4819077	Washer, 1.2
15	4820214	Spring, button lever	48	4819029	Gear, take-up roller	80	4819078	Washer, 1.55
16	4833451	Lever, PAUSE	49	4819037	Spring	81	4819180	Polyslider washer cut 1.2 x 3 x 0.25
17	4832482	Plate ass'y	50	4819033	Supply reel ass'y	82	4832432	P washer 2.05
18	4819007	Spring, button lever	51	4819034	Take-up reel ass'y	83	4833459	Frame
19	4819100	Spring, button lever	52	4819112	FF gear	84	4833450	Shaft, button lever
20	4833452	REC spring plate	53	4832421	Record safety lever	85	4819072	Screw, M2x7
21	4819008	Spring, actuator	54	4819032	Spring	86	4819202	Camera screw 2x2.5
22	4819009	Lever AUTO	55	4833456	Bracket, MOTOR	87	4832471	Screw, 2x2.5 pan head
23	4819000	Spring, AUTO lever	56	4467551	Motor bracket	88	4832472	Screw, 1.7x4.5 pan head
24	4820217	Spring, play button lever	57	4819039	Motor rubber	89	4833463	Lever, B
25	4832091	Leaf switch MSW-1669	58	4819533	Screw, motor collar	90	4833464	Lever, A
26	4832102	Leaf switch MSW-1482CV	59	4819043	Level eject slide	91	4833465	Screw, special
27	4820218	Spring, switch actuator	60	4819044	Spring, eject slide lever	92	4833472	C Tapping screw M2x6
28	4820219	Head panel	61	4819036	Pack spring	93	4833467	Spring
29	4819014	Head base	62	4833457	Belt	94	4832461	Bracket, forward/rewind switch
30	4820221	Spring, head panel	63	4820252	Main belt	95	4832481	Lever A
31	4819018	MG arm	64	4833458	Insulation mat	96	4833468	Collar
32	4819006	PR stopper	65	4833469	Mat	97	4833460	Collar (B)
33	4819015	Sensing plate ass'y						

## Cabinet

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
<b>for FINAL ASSEMBLY</b>			17	2737381	Microphone	35	4567433	3 x 10 CT bind screw
1	3800931	Volume knob	18	3180341	Mic cover	36	4442131	Handle bracket L
2	3303181	Knob 38 [except W, W (UN), AU]	19	86994082	Screw, 3 x 8 BT bind head	37	4442132	Handle bracket R
	3303091	Fine tuning knob [for W, W (UN) AU]	<b>for TOP PANEL ASSEMBLY</b>			38	87444052	Screw, bind head 3 x 5
3	3303331	Tuning knob [for W, W (UN) AU]	20	4040511	Top panel ass'y (for H)	39	4689611	Rubber cushion
4	3348611	OG gear [for W, W (UN), AU]		4040512	Top panel ass'y (for HC)	40	4578973	Screw, bind tapping 3 x 8
5	3303191	Knob, switch		4040513	Top panel ass'y (for E)	41	4418013	E ring
6	3800901	Side handle		4040514	Top panel ass'y [for E(BS)]	<b>for REAR CASE ASSEMBLY</b>		
7	2667922	Siemens plug [for H, W, W (UN)]		4040515	Top panel ass'y [for W, W (UN)]	42	4040731	Rear case ass'y (for H)
8	4577817	Screw 3 x 30		4040516	Top panel ass'y (for AU)		4040732	Rear case ass'y (for HC)
9	86994102	Screw, 3 x 10 BT bind head	21	4592021	Tuning shaft [except W, W (UN) AU]		4040733	Rear case ass'y (for E)
10	4567438	Screw, tapping bind head 3 x 25		4592022	Tuning shaft [for W, W (UN) AU]		4040734	Rear case ass'y [for E(BS)]
11	4578953	Screw, 3 x 20 BT black	22	3934271	Roller		4040735	Rear case ass'y (for W)
12	4441920	Handle	23	4577661	Roller pin		4040737	Rear case ass'y [for W (UN)]
13	4788371	Handle arm	24	3800941	Pointer		4040736	Rear case ass'y (for AU)
14	8737408	Flat screw -3mm D x 8mm black	25	3348701	Pulley	43	3369849	Spring
<b>for FRONT CASE ASSEMBLY</b>			26	3340321	Spring	44	4436666	Terminal
15	4040711	Front case ass'y (for H)	27	4040421	Cassette lid sub ass'y	45	3973951	Battery holder
	4040712	Front case ass'y (for HC)	28	4040422	Cassette lid sub ass'y	46	3369941	Spring
	4040713	Front case ass'y [for E, E(BS)]	29	3950381	Damper ass'y	47	86994082	3 x 8 BT bind head
	4040714	Front case ass'y [for W, W (UN)]	30	86914102	Screw, 3 x 10 BT bind head	48	4468141	Rec lever (D)
	4040715	Front case ass'y (for AU)	31	4442141	Lid spring holder	49	4578973	Screw, bind tapping 3 x 8
16	4578973	Screw bind tapping 3 x 8	32	3390062	Lid spring SPR	50	86994122	Screw, tapping bind head 3 x 12
			33	2757901	Rod antenna	51	4577818	Screw, bind tapping 3 x 50
			34	4469401	Rod antenna bracket	52	86994102	Screw, 3 x 10 BT bind head [for W, W (UN)]
						53	3979211	Battery lid sub ass'y
						<b>for DECK ASSEMBLY</b>		
						54	3800961	Cassette button

## REPLACEMENT PARTS LIST

CD..... Ceramic discal    EL..... Electrolytic    ST..... Styrol    ME..... Metal    CO..... Composition    PP..... Polypro-pylene  
 CC..... Cylindrical ceramic    MF..... Mylar, film    CF..... Carbon film    MO..... Metal, oxide    FR..... Fuse resistor

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
<b>CAPACITORS</b>								
C101	0208635	CD 5pF $\pm 0.25\text{pF}$ 50V	C170	02086662	CD 18pF $\pm 5\%$ 50V [for E, E (BS)]	C503	02497682	CD 0.1 $\mu\text{F}$ $\pm 20\%$ 25V
C102	02097312	CD 1000pF $\pm 10\%$ 50V	C199	0248660	CD 10pF $\pm 1\text{pF}$ 50V (for H, HC)	C504	02528052	EL 0.47 $\mu\text{F}$ 50V
C103	02086682	CD 22pF $\pm 5\%$ 50V	C201	02091752	CD 0.047 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	C505	0209773	CD 0.022 $\mu\text{F}$ $\pm 20\%$ 50V
C104	0208635	CD 5pF $\pm 0.25\text{pF}$ 50V	C202	0252521	EL 10 $\mu\text{F}$ 16V	C506	02528112	EL 1 $\mu\text{F}$ 50V
C105	02086782	CD 56pF $\pm 5\%$ 50V	C203	02523222	EL 22 $\mu\text{F}$ 10V	C507	02523312	EL 100 $\mu\text{F}$ 10V
C106	02097222	CD 390pF $\pm 10\%$ 50V	C204	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	C508	02523312	EL 100 $\mu\text{F}$ 10V
C107	02441012	CD 1000pF $\pm 10\%$ 50V	C205	02097342	CD 3300pF $\pm 10\%$ 50V	C509	02525222	EL 22 $\mu\text{F}$ 16V
C108	0208018	CD 8pF $\pm 0.5\text{pF}$ 50V	C206	0249765	CD 0.047 $\mu\text{F}$ $\pm 20\%$ 25V	C510	02525222	EL 22 $\mu\text{F}$ 16V
C109	02464422	CD 12pF $\pm 5\%$ 50V	C207	02528052	EL 0.47 $\mu\text{F}$ 50V	C511	02523252	EL 47 $\mu\text{F}$ 10V
C110	0208020	CD 10pF $\pm 0.5\text{pF}$ 50V	C208	02097232	CD 470pF $\pm 10\%$ 50V	C512	02760122	MF 0.15 $\mu\text{F}$ $\pm 10\%$ 50V
C111	02097312	CD 1000pF $\pm 10\%$ 50V	C209	02523312	EL 100 $\mu\text{F}$ 10V	C513	02760122	MF 0.15 $\mu\text{F}$ $\pm 10\%$ 50V
C113	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	C210	02760112	MF 0.1 $\mu\text{F}$ $\pm 10\%$ 50V	C514L,R	02523312	EL 100 $\mu\text{F}$ 10V
C114	02487322	CD 220pF $\pm 10\%$ 50V	C211	02441732	CD 0.022 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	C515L,R	02760112	MF 0.1 $\mu\text{F}$ $\pm 10\%$ 50V
C115	02487082	CD 22pF $\pm 10\%$ 50V	C212	02526152	EL 4.7 $\mu\text{F}$ 25V	C516	02525352	EL 470 $\mu\text{F}$ 16V
C151	0208664	CD 15pF $\pm 5\%$ 50V	C213	02526152	EL 4.7 $\mu\text{F}$ 25V	C517L,R	02528132	EL 3.3 $\mu\text{F}$ 50V
		[for E, E (BS)]	C214	02526152	EL 4.7 $\mu\text{F}$ 25V (except H, HC)	C518L,R	02097332	CD 2200pF $\pm 10\%$ 50V
C151	0208633	CD 3pF $\pm 0.25\text{pF}$ 50V (for W, AU)	C215	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	C519L,R	02523352	EL 470 $\mu\text{F}$ 10V
C152	0208635	CD 5pF $\pm 0.25\text{pF}$ 50V [for E, E (BS)]	C301	02528112	EL 1 $\mu\text{F}$ 50V	C520	0252541	EL 1000 $\mu\text{F}$ 16V
C153	02086802	CD 68pF $\pm 5\%$ 50V [for E, E (BS)]	C302	02528112	EL 1 $\mu\text{F}$ 50V	C601	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V
C153	0208633	CD 3pF $\pm 0.25\text{pF}$ 50V [for W, W (UN) AU]	C303	02528132	EL 3.3 $\mu\text{F}$ 50V	C602	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V
C154	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V [for E, E (BS)]	C304	02684462	PP 1000pF $\pm 5\%$ 100V	C603	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V
C155	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V [for E, E (BS)]	C305	02528112	EL 1 $\mu\text{F}$ 50V	C604	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V
C156	0208635	CD 5pF $\pm 0.25\text{pF}$ 50V (except H, HC)	C306	02750132	MF 0.022 $\mu\text{F}$ $\pm 10\%$ 50V	C605	0252642	EL 2200 $\mu\text{F}$ 25V
C157	02464462	CD 18pF $\pm 5\%$ 50C [for E, E (BS)]	C307	02750132	MF 0.022 $\mu\text{F}$ $\pm 10\%$ 50V	C606	02525352	EL 470 $\mu\text{F}$ 16V
C157	02086502	CD 10pF $\pm 0.5\text{pF}$ 50V [for W, W (UN) AU]	C308	02528112	EL 1 $\mu\text{F}$ 50V	C607	0252521	EL 10 $\mu\text{F}$ 16V
C158	02086502	CD 10pF $\pm 0.5\text{pF}$ 50V [for W, W (UN) AU]	C309	02528112	EL 1 $\mu\text{F}$ 50V	C801L,R	0252801	EL 0.1 $\mu\text{F}$ 50V
C159	02086762	CD 47pF $\pm 5\%$ 50V [for E, E (BS)]	C402L,R	02528052	EL 0.47 $\mu\text{F}$ 50V	C802L,R	02097622	CD 0.015 $\mu\text{F}$ $\pm 20\%$ 25V
C160	02091752	CD 0.047 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	C403L,R	02097312	CD 1000pF $\pm 10\%$ 50V	C803L,R	02097612	CD 0.01 $\mu\text{F}$ $\pm 20\%$ 25V
C161	02750112	MF 0.01 $\mu\text{F}$ $\pm 10\%$ 50V [for E, E (BS)]	C404L,R	0252803	EL 0.33 $\mu\text{F}$ 50V	C804L,R	02097342	CD 3300pF $\pm 10\%$ 50V
C161	0268443	PP 3900pF $\pm 5\%$ 100V [for W, W (UN) AU]	C405L,R	02528132	EL 3.3 $\mu\text{F}$ 50V	C805L,R	02097332	CD 2200pF $\pm 10\%$ 50V
C162	0268321	PP 360pF $\pm 5\%$ 100V [for E, E (BS)]	C406L,R	0252802	EL 0.22 $\mu\text{F}$ 50V	C806L,R	02097312	CD 1000pF $\pm 10\%$ 50V
C162	0268442	PP 1500pF $\pm 5\%$ 100V [for W, W (UN) AU]	C408L,R	02528052	EL 0.47 $\mu\text{F}$ 50V	C807L,R	0252521	EL 10 $\mu\text{F}$ 16V
C163	1221392	ST 220pF $\pm 5\%$ 50V [for E, E (BS)]	C409L,R	02097312	CD 1000pF $\pm 10\%$ 50V	C808L,R	02097352	CD 4700pF $\pm 10\%$ 50V
C163	0268321	PP 360pF $\pm 5\%$ 100V [for W, W (UN) AU]	C410L,R	0252803	EL 0.33 $\mu\text{F}$ 50V	<b>RESISTORS</b>		
C164	02086662	CD 18pF $\pm 5\%$ 50V [for W, W (UN) AU]	C411L,R	02528132	EL 3.3 $\mu\text{F}$ 50V	R101	0113615	CF 1k $\Omega$ $\pm 5\%$ SRD1/6P
C164	02086842	CD 100pF $\pm 5\%$ 50V [for E, E (BS)]	C412L,R	0252802	EL 0.22 $\mu\text{F}$ 50V	R102	0113681	CF 560k $\Omega$ $\pm 5\%$ SRD1/6P
C165	02097312	CD 1000pF $\pm 10\%$ 50V (except H, HC)	C413	0252521	EL 10 $\mu\text{F}$ 16V	R103	0113591	CF 100 $\Omega$ $\pm 5\%$ SRD1/6P
C166	0208635	CD 5pF $\pm 0.25\text{pF}$ 50V [for E, E (BS)]	C414	0209765	CD 0.047 $\mu\text{F}$ $\pm 20\%$ 25V	R104	0113615	CF 1k $\Omega$ $\pm 5\%$ SRD1/6P
			C415	02441712	CD 0.01 $\mu\text{F}$ $^{+80}_{-20}\%$ 50V	R105	0113659	CF 68k $\Omega$ $\pm 5\%$ SRD1/6P
			C416	02523232	EL 33 $\mu\text{F}$ 10V	R106	0113613	CF 820 $\Omega$ $\pm 5\%$ SRD1/6P
			C417L,R	02497382	CD 1000pF $\pm 20\%$ 50V	R107	0113579	CF 33 $\Omega$ $\pm 5\%$ SRD1/6P
			C431L,R	02740132	MF 2200pF $\pm 10\%$ 50V	R108	0113663	CF 100k $\Omega$ $\pm 5\%$ SRD1/6P
			C432	02097312	CD 1000pF $\pm 10\%$ 50V	R109	0113639	CF 10k $\Omega$ $\pm 5\%$ SRD1/6P
			C433	02523312	EL 100 $\mu\text{F}$ 10V	R110	0113591	CF 100 $\Omega$ $\pm 5\%$ SRD1/6P
			C434	02750132	MF 0.022 $\mu\text{F}$ $\pm 10\%$ 50V	R151	0113679	CF 470k $\Omega$ $\pm 5\%$ SRD1/6P [for E, E (BS)]
			C451L,R	0209764	CD 0.033 $\mu\text{F}$ $\pm 20\%$ 25V	R152	0113607	CF 470 $\Omega$ $\pm 5\%$ SRD1/6P [for E, E (BS)]
			C452L,R	02528132	EL 3.3 $\mu\text{F}$ 50V	R153	0113643	CF 15k $\Omega$ $\pm 5\%$ SRD1/6P [for E, E (BS)]
			C453L,R	02097312	CD 1000pF $\pm 10\%$ 50V	R153	0113647	CF 22k $\Omega$ $\pm 5\%$ SRD1/6P [for W, W (UN) AU]
			C454	02525312	EL 100 $\mu\text{F}$ 16V	R154	0113645	CF 18k $\Omega$ $\pm 5\%$ SRD1/6P [for H, HC, E, E (BS)]
			C455L,R	02528132	EL 3.3 $\mu\text{F}$ 50V	R154	0113639	CF 10k $\Omega$ $\pm 5\%$ SRD1/6P [for W, W (UN) AU]
			C456L,R	02523232	EL 33 $\mu\text{F}$ 10V	R155	0113645	CF 18k $\Omega$ $\pm 5\%$ SRD1/6P [for W, W (UN) AU]
			C461	02525352	EL 470 $\mu\text{F}$ 16V			
			C471L,R	02528132	EL 3.3 $\mu\text{F}$ 50V			
			C472L,R	02097622	CD 0.015 $\mu\text{F}$ $\pm 20\%$ 25V			
			C473L,R	02497612	CD 0.01 $\mu\text{F}$ $\pm 20\%$ 25V			
			C474L,R	02497632	CD 0.022 $\mu\text{F}$ $\pm 20\%$ 25V			
			C475L,R	02528132	EL 3.3 $\mu\text{F}$ 50V			
			C476L,R	02097312	CD 1000pF $\pm 20\%$ 50V			
			C501	02528052	EL 0.47 $\mu\text{F}$ 50V			
			C502	02497682	CD 0.1 $\mu\text{F}$ $\pm 20\%$ 25V			

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R155	0113649	CF 27k $\Omega$ $\pm$ 5% SRD1/6P (for E, E (BS))	R508	0113623	CF 2.2k $\Omega$ $\pm$ 5% SRD1/6P	<b>DIODES</b>		
R156	0113595	CF 150 $\Omega$ $\pm$ 5% SRD1/6P (except H, HC)	R509	0113571	CF 15 $\Omega$ $\pm$ 5% SRD1/6P	Q702	2328083	2SA844E
R201	0113583	CF 47 $\Omega$ $\pm$ 5% SRD1/6P	R510	0113627	CF 3.3k $\Omega$ $\pm$ 5% SRD1/6P	Q703	2319101	2SC1684R
R202	0113643	CF 15k $\Omega$ $\pm$ 5% SRD1/6P	R511	0129509	CF 2.2 $\Omega$ $\pm$ 5% SRD1/4P	Q704	2319101	2SC1684R
R203	0113655	CF 47k $\Omega$ $\pm$ 5% SRD1/6P	R512	0129509	CF 2.2 $\Omega$ $\pm$ 5% SRD1/4P	Q801L,R	2319101	2SC1684R
R204	0113627	CF 3.3k $\Omega$ $\pm$ 5% SRD1/6P	R513L,R	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	D101	2398082	1N4148
R206	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	R514L,R	0129509	CF 2.2 $\Omega$ $\pm$ 5% SRD1/4P	D102	2398082	1N4148
R207	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	R515L,R	0113611	CF 680 $\Omega$ $\pm$ 5% SRD1/6P	D103	2398082	1N4148
R208	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P (except H, HC)	R516L,R	0113599	CF 220 $\Omega$ $\pm$ 5% SRD1/6P	D201	2398082	1N4148
R302	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	R517L,R	0129549	CF 56 $\Omega$ $\pm$ 5% SRD1/4P	D202	2398082	1N4148
R303	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	R518	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	D203	2398082	1N4148
R304	0113609	CF 560 $\Omega$ $\pm$ 5% SRD1/6P	R519	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P	D204	2398082	1N4148 (except H, HC)
R305	0113671	CF 220k $\Omega$ $\pm$ 5% SRD1/6P	R520	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	D205	2398082	1N4148
R306	0113627	CF 3.3k $\Omega$ $\pm$ 5% SRD1/6P	R601	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	D206	2398082	1N4148 (except H, HC)
R307	0113627	CF 3.3k $\Omega$ $\pm$ 5% SRD1/6P	R602	01110352	MO100 $\Omega$ $\pm$ 5% RS1B	D471	2398082	1N4148
R308	0113653	CF 39k $\Omega$ $\pm$ 5% SRD1/6P	R603	01110332	MO82 $\Omega$ $\pm$ 5% RS1B	D601	2398062	1N4001
R309	0113653	CF 39k $\Omega$ $\pm$ 5% SRD1/6P	R701	0113665	CF 120k $\Omega$ $\pm$ 5% SRD1/6P	D602	2398062	1N4001
R310	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	R702	0113665	CF 120k $\Omega$ $\pm$ 5% SRD1/6P	D603	2398062	1N4001
R311	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	R703	0113595	CF 150 $\Omega$ $\pm$ 5% SRD1/6P	D604	2398062	1N4001
R401	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	R704	0113595	CF 150 $\Omega$ $\pm$ 5% SRD1/6P	D605	2398062	1N4001 [for W, W (UN)]
R402L,R	0113679	CF 470k $\Omega$ $\pm$ 5% SRD1/6P	R705	0113621	CF 1.8k $\Omega$ $\pm$ 5% SRD1/6P	D701	2398082	1N4148
R403L,R	0113635	CF 6.8k $\Omega$ $\pm$ 5% SRD1/6P	R706	0113621	CF 1.8k $\Omega$ $\pm$ 5% SRD1/6P	ZD301	2338365	HZ-5C
R404L,R	0113681	CF 39 $\Omega$ $\pm$ 5% SRD1/6P	R707	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	LED301	2397311	TLR-208
R405L,R	0113611	CF 680 $\Omega$ $\pm$ 5% SRD1/6P	R708	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	LED801	2397311	TLR-208
R406	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	R709	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	<b>VARIABLE RESISTORS</b>		
R407L,R	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	R710	0113663	CF 100k $\Omega$ $\pm$ 5% SRD1/6P	RV501L, R	0189321	10k $\Omega$ - (A) Volume
R408L,R	0113663	CF 100k $\Omega$ $\pm$ 5% SRD1/6P	R711	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	RV801L, R	0189284	100k $\Omega$ - (B) Graphic equalizer
R409L,R	0113679	CF 470k $\Omega$ $\pm$ 5% SRD1/6P	R801L,R	0113647	CF 22k $\Omega$ $\pm$ 5% SRD1/6P	RV802L, R	0189284	100k $\Omega$ - (B) Graphic equalizer
R410L,R	0113635	CF 6.8k $\Omega$ $\pm$ 5% SRD1/6P	R802L,R	0113647	CF 22k $\Omega$ $\pm$ 5% SRD1/6P	RV803L, R	0189284	100k $\Omega$ - (B) Graphic equalizer
R411L,R	0113681	CF 39 $\Omega$ $\pm$ 5% SRD1/6P	R803L,R	0113641	CF 12k $\Omega$ $\pm$ 5% SRD1/6P	RT301	0199332	5k $\Omega$ FM MPX free run
R412L,R	0113611	CF 680 $\Omega$ $\pm$ 5% SRD1/6P	R804L,R	0113641	CF 12k $\Omega$ $\pm$ 5% SRD1/6P	RT701	0158922	1k $\Omega$ - (B) Tape1 Normal speed
R413L,R	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	R805L,R	0113637	CF 8.2k $\Omega$ $\pm$ 5% SRD1/6P	RT702	0158923	2k $\Omega$ - (B) Tape1 High speed
R414L,R	0113655	CF 47k $\Omega$ $\pm$ 5% SRD1/6P	R806L,R	0113637	CF 8.2k $\Omega$ $\pm$ 5% SRD1/6P	RT703	0158922	1k $\Omega$ - (B) Tape2 Normal speed
R415L,R	0113601	CF 270 $\Omega$ $\pm$ 5% SRD1/6P	R807L,R	01136872	CF 1M $\pm$ 5% SRD1/6P	RT704	0158923	2k $\Omega$ - (B) Tape2 High speed
R416	0113623	CF 2.2k $\Omega$ $\pm$ 5% SRD1/6P	R808L,R	0113631	CF 4.7k $\Omega$ $\pm$ 5% SRD1/6P	<b>COILS AND TRANSFORMERS</b>		
R417	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	R809L,R	0113605	CF 390 $\Omega$ $\pm$ 5% SRD1/6P	L101	2137683	FM RF coil
R418	0113631	CF 4.7k $\Omega$ $\pm$ 5% SRD1/6P	R810L,R	0113631	CF 4.7k $\Omega$ $\pm$ 5% SRD1/6P	L102	2137682	FM OSC coil
R419L,R	0113663	CF 100k $\Omega$ $\pm$ 5% SRD1/6P	R811	0113613	CF 820 $\Omega$ $\pm$ 5% SRD1/6P	L103	2137684	Choke coil
R420L,R	0113663	CF 100k $\Omega$ $\pm$ 5% SRD1/6P	R812L,R	0113651	CF 33k $\Omega$ $\pm$ 5% SRD1/6P	L104	2137684	Choke coil
R430	0129575	CF 390 $\Omega$ $\pm$ 5% SRD1/4P	R815L,R	0113655	CF 47k $\Omega$ $\pm$ 5% SRD1/6P	L151	2137662	SW ANT coil [for E, E (BS)]
R431	0129575	CF 390k $\Omega$ $\pm$ 5% SRD1/4P	<b>ICS AND TRANSISTORS</b>			L151	2137667	Antenna coil [for W, W (UN) AU]
R432	0129571	CF 270 $\Omega$ $\pm$ 5% SRD1/4P	IC201	2389511	TA7640AP	L152	2758223	Ferrite antenna (for H, HC)
R433	0113647	CF 22k $\Omega$ $\pm$ 5% SRD1/6P	IC301	2397521	AN7420	L152	2757994	Ferrite antenna [for E, E (BS)]
R434	0113563	CF 6.8 $\Omega$ $\pm$ 5% SRD1/6P	IC451	2387022	$\mu$ PC1228HA	L152	2757982	Ferrite antenna [for W, W (UN) AU]
R451L,R	0113619	CF 1.5k $\Omega$ $\pm$ 5% SRD1/6P	IC501	2389521	$\mu$ PC1278H	L153	2757994	Ferrite antenna [for E, E (BS)]
R452L,R	0113675	CF 330k $\Omega$ $\pm$ 5% SRD1/6P	IC502	2300871	$\mu$ PC1288V	L153	2757982	Ferrite antenna [for W, W (UN) AU]
R453L,R	0113579	CF 220 $\Omega$ $\pm$ 5% SRD1/6P	Q101	2319071	HIT9016G	L154	2137671	SW OSC coil [for E, E (BS)]
R454L,R	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	Q102	2319071	HIT9016G	L154	2137672	SW OSC coil [for W, W (UN) AU]
R471L,R	0113633	CF 5.6k $\Omega$ $\pm$ 5% SRD1/6P	Q151	2319081	HIT9011H [for E, E (BS)]	L155	2137634	MW OSC coil (for H, HC)
R472L,R	0113629	CF 3.9k $\Omega$ $\pm$ 5% SRD1/6P	Q401L,R	2319091	HIT9014N(C)	L155	2137631	MW OSC coil [for E, E (BS)]
R473L,R	0113679	CF 33 $\Omega$ $\pm$ 5% SRD1/6P	Q402L,R	2319091	HIT9014N(C)	L155	2137633	SW OSC coil [for W, W (UN) AU]
R474L,R	0113623	CF 2.2k $\Omega$ $\pm$ 5% SRD1/6P	Q431	2329453	2SC945P	L156	2137682	FM OSC coil [for E, E (BS)]
R475L,R	0113615	CF 1k $\Omega$ $\pm$ 5% SRD1/6P	Q471L,R	2319101	2SC1684R			
R476L,R	0113679	CF 470k $\Omega$ $\pm$ 5% SRD1/6P	Q472L,R	2319101	2SC1684R			
R477L,R	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	Q473L,R	2319101	2SC1684R			
R478	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	Q501L,R	2319101	2SC1684R			
R479	0113639	CF 10k $\Omega$ $\pm$ 5% SRD1/6P	Q502	2319101	2SC1684R			
R480	0129906	CF 33k $\Omega$ $\pm$ 5% SRD1/4P	Q601	2319052	HIT8050C			
R501L,R	0113649	CF 27k $\Omega$ $\pm$ 5% SRD1/6P	Q701	2328083	2SA844E			
R503	0113679	CF 470k $\Omega$ $\pm$ 5% SRD1/6P						
R504	0113643	CF 15k $\Omega$ $\pm$ 5% SRD1/6P						
R505	0113651	CF 33k $\Omega$ $\pm$ 5% SRD1/6P						
R506	0113635	CF 6.8k $\Omega$ $\pm$ 5% SRD1/6P						
R507	0113651	CF 33k $\Omega$ $\pm$ 5% SRD1/6P						

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
L156	2137631	MW OSC coil [for W, W (UN) AU]	Δ J601	2678282	DC jack (for W)	CT156	0283130	Trimmer capacitor 3T-8M (except H, HC)
L157	2137684	Choke coil (except H, HC)	S201	2629366	Switch, Lever (BAND) (except H, HC)	CV101	0282137	Variable capacitor (for H, HC)
L471,LR	2227991	Choke coil 3.3μH	S401	2629363	Switch, Lever (RIF/SPEED)	CV102		
T101	2154962	FM IF trans.	S402	2629291	Slide switch (R/P)	CV151		
T201	2154952	AM IF trans.	S403	2629362	Switch, Lever (TAPE)	CV152		
T202	2154964	FM IF trans.	S501	2628531	Switch, Lever (FUNCTION)	CV101	0282202	Capacitor variable (except H, HC)
T203	2154951	AM IF trans.	S502	2629368	Switch, Lever (3D SYSTEM)	CV102		
T431	2137651	REC OSC trans.	S601	2629261	Slide switch (AC/BATT)	CV151		
<b>MISCELLANEOUS</b>			Δ S602	2629341	Switch, Micro (POWER)	CV152		
			Δ S603	2618471	Voltage selector switch (for W, W (UN))	Δ	2249313	Power transformer 175G 4.39VA (for H, HC)
CF201	2135321	Ceramic filter	CT151	0283130	Trimmer capacitor 3T-8M (except H, HC)	Δ	2249311	Power transformer 520G 7.9VA (for E)
Δ F601	2728034	Fuse 400mA [for H, HC, W W, (UN)]	CT152	0283130	Trimmer capacitor 3T-8M (except H, HC)	Δ	2249312	Power transformer 520G 7.9VA [for E (BS), AU]
Δ F601	2728075	Fuse 160mA (for E, E (BS), AU)	CT153	0283130	Trimmer capacitor 3T-8M (except H, HC)	Δ	2249314	Power transformer 175G 4.5VA (for W, W (UN))
Δ F602	2728006	Fuse 2A (for H, HC)	CT154	0283130	Trimmer capacitor 3T-8M (except H, HC)		07413042	Bind screw 2.6MMD × 4MM
Δ F602	2728076	Fuse T2A (except H, HC)	CT155	0283130	Trimmer capacitor 3T-8M (except H, HC)		87414032	Bind screw-3MM × 3MM
J401L,R	2678201	2P pin jack (LINE)					87414082	Screw, bind head 3 × 8
J501	2679382	Jack Headphone						